

## Storage Area Network Replacement RFP

### Questions & Answers

July 27, 2012

#### SAN – Physical Architecture

1. The indication on the network diagrams provided show redundant links between Kirkland City Hall and the Bellevue Data Center. Are these links 10Gbit as suggested on these drawings?
  - *Yes*
2. Connectivity between primary and DR site.
  - *Our architecture really doesn't split into a primary site and a DR site. It is more accurately a single logical server room that is split between two physical locations. In a few cases, such as backup to disk, mirror copies exist in both locations.*
  - *Connectivity between sites is dedicated, customer owned, single mode optical fiber currently supporting 10gb/sec Ethernet connections (not a leased circuit).*
3. What type of connectivity exists/will exist between primary and DR site?
  - *See above – we do not have a primary and a DR site, but rather a server room split across multiple locations.*
  - *For the purposes of the RFP, please assume that because this is already production, working well and has shown no performance problems, that everything is satisfactory*
  - Communications Link Speed (in Mb/s)
    - a. *10MB/sec*
  - What is the distance between sites (as the wire runs)?
    - a. *40KM Single mode modules are the current solution (distance is greater than 15KM)*
  - How much of the link is available for replication?
    - a. *Usage of the current link varies.*
  - What is the Round Trip Latency? (Bellevue to Kirkland)
    - a. *<10ms*
  - What is the type of link? (fibre, IP, iSCSI)
    - a. *IP*
  - Actual Throughput of link?
    - a. *10MB/sec*

- Is this a shared link or dedicated to replication?  
a. *Shared*
  - Is there a compression factor associated with this link?  
a. *No*
  - Is WAN optimization used?  
a. *No*
2. Do you know what the latency is between the Kirkland DC and the City of Bellevue DC? (one or more 1Gb lines?)
- *Dedicated single mode optical fiber currently running at 10GB/sec Ethernet with latency of <10ms*
4. Which site do you consider the "Primary Data Center"?
- *Our architecture really doesn't split into a primary site and a DR site. It is more accurately a single logical server room that is split between two physical locations. In a few cases, such as backup to disk, mirror copies exist in both locations.*
5. Data Center:
- Number of servers at each data centers:
    - *Most physical servers are located at the Bellevue Data Center, however, the architecture really doesn't split into a primary site and a DR site. It is more accurately a single logical server room that is split between two physical locations. In a few cases, such as backup to disk, mirror copies exist in both locations.*
  - Require vMotion support between data centers:
    - *No, VMWARE hosts are located on in the Bellevue Data Center. See above for additional information related to the existing configuration of the network.*
6. What would be the purpose of 3rd tertiary site? Out of local geo for backup or additional Production replication?
- *Redundancy and resiliency. Out of locality is important.*
7. Do you currently utilize cloud storage or any external storage providers?
- *No*
8. How many datacenters do you utilize that have centralized storage?
- *One*

## SAN – Logical Configuration

9. How long are they looking to retain their backups on disk?
  - *The current backup data is retained as follows; 4 Weekly back-ups which are rolled into a single monthly that is retained for 120 days on all file data. Exchange/E-Mail data is retained for 4 weeks only. The solution proposed should exceed this baseline requirement. Additional back-up capacity is also required to accommodate longer term storage in support of litigation hold requests.*
10. Information is provided on the drive type and capacity for each LUN. In order to effectively configure a new storage solution, would it be possible to be provided the following information (This is not for the throughput or Iops that are currently available, but what is required):
  - Iops requirement (from the host) per LUN
    - *This information is not currently available and it is expected that the vendor will propose a solution that offers performance improvement from the current solution.*
  - Throughput (in MB/s) requirement (from the host) to the array/LUN
    - *The storage forecast sheets project the expected growth of the environment. The proposer should review this information and propose a solution that will not require substantial changes or modifications to accommodate the stated 5 year expectations.*
11. What is the change rate of the data per day?
  - *This varies based upon data types. Exchange changes in full each day from a file level. Other data types typically have lower change rates. The proposed solution shall offer enhancements and improvements over the current solution in place.*
12. Will all listed LUNs be replicated? If not, see next.
  - *Yes, the SAN and backup solution will need to accommodate 100% of the current data. Final design of the solution is the responsibility of the proposer.*
  - What applications are being replicated?
    - *NA*
  - How many volumes will be replicated?
    - *See RFP and storage worksheets for requirements*
  - What is the initial amount of data to be replicated

- *See RFP and the storage worksheets for requirements*
- 13. Is there any performance data available? Any MB/s or IOPS requirements for any of the key applications?
  - *Not at this time. The last time we purchased a SAN, this data was measured by the successful vendor and a solution refined from that. We anticipate a similar approach will be used this time and that the successful vendor should have the capability to acquire this data.*
- 14. SAN
  - Required storage size to be provided:
    - *See the RFP for detailed information*
  - IOPS requirements:
    - *See responses above*
  - Caching or SSD requirements for performance enhancements and size estimate:
    - *Final design of the SAN and back-up solution is the responsibility of the proposer.*
- 15. What data access protocol are you using (Fibre-Channel, iSCSI, CIFS/NFS? Physical connectivity between BLV/Kirkland? FC? DWDM? IP?
  - *10GB/sec Ethernet*
- 16. What do you know about your peak IO performance workloads on storage array? Peak IOPS? Read/Write ratio? Specify for both block and file storage if applicable. Also, if available, copies of the latest NAR (Navisphere Analyzer) data would be appreciated.
  - *NAR data is not currently available.*
- 17. Do you currently utilize any layered functionality in your storage platforms (QoS, Replication, Snapshots, Thin Provisioning)?
  - *No, but technologies that contribute to a better and more resilient environment are encouraged.*
- 18. Do you currently integrate your applications with your storage arrays for snapshotting or replication?
  - *No, but technologies that contribute to a better and more resilient environment are encouraged.*

19. What is your backup schedule (Fulls, Differentials, Incrementals)?
- *Currently back-ups are performed daily however the RFP contains RPO and RTO requirements in excess of the current process.*
20. Do you execute a significant amount of on-demand backups?
- *Not currently*
21. Does data age off of primary storage to archive? Is there a policy for data movement between primary storage and archive? Are there multiple tiers on which data resides prior to archive?
- *See the RFP for the requirements of the replacement system. Final design of the solution is the responsibility of the proposer and shall meet the basic requirements stated in the RFP.*
22. What are your current RPO and RTO values?
- *See page 7 of the RFP. Current RTO and RPO values are not applicable*
23. How many monthly restore operations do you execute?
- *Typically fewer than 20 per month*

#### **RFP – Technical Requirements/Process**

24. On page 8 paragraph 4 of the RFP, it talks about bench testing. Can this testing be done in our Bellevue lab, using our existing equipment/infrastructure?
- *The requirement of the RFP is that all equipment that will be placed in service for the City of Kirkland is tested prior to and after installation.*
25. Please confirm our reading of the RFP - the backup environment replacement will cover the backup of the SAN attached servers, as well as non-SAN attached servers and all end-user workstations/PC's?
- *That is correct except that end-user workstations are not directly backed up. End users "my documents" are network shares and are backed up from the network share. Individual PC's are not part of the back-up environment.*
26. Are all databases MS SQL or are there other database technologies used?
- *For the most part, the City standard is SQL. There is one instance of Informix and a couple of other one-off databases such as Progress.*
27. What version of VMware is being used?
- *VMWare Version 4.1 Currently, with plans to upgrade after the completion of this project*

28. If a vendors response offers up a SAN that is deemed the right fit for the City of Kirkland, but another vendor offers a preferred backup solution, will the City of Kirkland attempt to work with both vendors to "marry" the two solutions?
- *It is possible that enhancements to the successful proposers solution may be negotiated prior to final contract execution, but only a single proposer will be selected.*
29. On the storage forecast doc – are those Linux operating systems at the top? Or some other Unix flavor?
- *Yes. They are rebuilds of North American Enterprise Unix including CentOS and UBUNTU.*
30. What is the total amount of backup capacity in TB that you would like us to account for?
- *See paragraph 3 on page 7 of the RFP. Backup solution shall provide RPO and RTO performance per the RFP for a minimum of 180 days. Vendor is responsible for the final design and meeting these criteria.*
31. Verity if the City of Kirkland-RFP- Enterprise Storage Replacement-Job # 32-12-IT, Due Date: August 2, 2012, 4:00 PM, and the City of Kirkland-RFP-Storage Area Network Replacement- Job # 31-12-IT, Due Date: August 2, 2012, 4 p.m. (Pacific Time), are these two different bid projects, and also if we have to register with the City as a Vendor "prior" to submitting our bid?
- *They are separate projects. Execution of the NDA is required for access to all RFP documents. Vendors with the capability of bidding on both projects are welcome to do so.*
32. Are there any new applications or business units that are being explored with this refresh or is the purpose of this refresh to replace aged equipment?
- *No.*
33. What are the biggest challenges that you are facing as an IT organization?
- *Total cost of ownership is an important focus of this RFP*
34. How is the organization structured? Are you responsible for all facets of infrastructure, or are strategy, design and operations maintained separately?
- *This question s is not a clarification to the RFP. Proposers shall submit a proposed solution per the requirements of the RFP.*
35. What are your impressions of your current storage/backup environment?
- *The current environment requires replacement.*

36. How is your business organized? Are IT services charged back to the business, or is IT a budgeted entity?
- *The IT group does charge back, but does not currently charge specifically for storage or backup based on exact usage.*
37. What are your IT goals for the upcoming year?
- *Replacement of the enterprise network and SAN/Back-up solutions as indicated in the RFP's.*
38. Have you had any significant impacts to availability or performance in the past year?
- *Yes*
    - (if yes), how did that impact your business?
      - 1. *Critical services were not available*
    - (if yes), how was the issue resolved?
      - 1. *Replacement equipment*
    - (if yes), what was the root cause of the impact?
      - 1. *Failed supervisor module on a non-redundant core switch.*
39. How much overall storage capacity do you have in your environment today? How much is structured (Databases) and how much is unstructured (flat file, home folders)? How much is NAS? How much is Block SAN?
- *See storage forecast worksheets included as part of this RFP.*
40. Of your storage environment, how much capacity is allocated for Block and File storage? How much is utilized? Expected capacity growth over the next 5 years for Block and File storage?
- *See storage forecast worksheets included as part of this RFP.*
41. How much data in GB's is to be replicated between Bellevue and Kirkland sites? File and Block replication required?
- *See storage forecast worksheets included as part of this RFP.*
42. How is your business workflow organized? When is your peak I/O and throughput registered? Do you have special workflows (month-ends, for example) that impact performance?
- *The city supports the equivalent of many different businesses. Some, like parks and streets, are busiest during the summer. Others, like Finance, may be extra busy at year-end. Assume that we need highly available equipment at all times.*
43. What are the major applications that are hosted in the storage environment?
- *See the storage worksheets for DAS and NAS included with the RFP.*

44. How many hosts utilize the storage platform? How many SAN connected? How many direct connected to storage platform? Expected number of new host connections to storage array over the next 5 years?
- *See the storage worksheets for DAS and NAS included with the RFP*
45. What Operating Systems are hosted by the storage platforms?
- *See RFP for information related to the current environment.*
46. (If FC-connected), do you have a standard HBA type?
- *See RFP for information related to the current environment.*
47. What type of storage networking devices connect to these storage systems (Brocade, Cisco, McData, QLogic)? How many switches and ports currently utilized? Expected port growth over the next 5 years? Does RFP require IP SAN and/or FC SAN switch refresh?
- *See RFP for requirements and information related to the current environment.*
48. What storage management software packages are you currently utilizing?
- *See RFP for requirements and information related to the current environment. Proposers submittal shall include a complete replacement 'system'*
49. What are your current processes for capacity planning, device monitoring and alerting?
- *Not a requirement of this RFP*
50. What is your impression with your current backup environment?
- *The current environment requires replacement*
51. What are the biggest challenges with the backup environment?
- *Cost and ability to meet the current needs of the city. Growth in storage.*
52. How much backup capacity do you have in your environment?
- *The current back-up solution includes 7TB of capacity however this should not be interpreted as a baseline requirement. The vendor's proposed solution shall meet the requirements stated in the RFP.*
53. How much primary data growth are you experiencing per year?
- *See storage forecast worksheets included as part of the RFP*



54. How much backup growth are you experiencing per year?
- *See storage forecast worksheets included as part of the RFP*
55. What backup software infrastructure are you utilizing?
- *See page 6 of the RFP.*
56. Are you sending data to tape or to disk?
- *See page 6 of the RFP*
57. (If tape) what tape infrastructure are you using?
- *See page 6 of the RFP*
58. (If disk) what disk targets are you using?
- *See page 6 of the RFP*
59. What is your data retention period? Is there an established retention policy? Does the retention policy change based on the data type?
- *Data retention varies based on data type.*
60. Are tapes sent-off site? If so, who is the off-site storage provider?
- *See page 6 of the RFP*
61. Are tapes tested for verification purposes? If so, how often?
- *See page 6 of the RFP*
62. What is your current disaster recovery plan? How often is it tested?
- *Refer to the RFP for RTO and RPO criteria.*
63. Do you currently contract with a DR services provider?
- *No.*

#### **Vendor List Question**

64. Vendors who have provided intent to respond.

AT&T Government and Education (has withdrawn)  
Dell  
Denali Advanced Integration  
Fujitsu Network Communications

Juniper Networks  
LeVerage Information Systems  
Lillian LLC Enterprise IT  
LoftOff IT Cloud Solutions  
Mainline Information Systems, Inc (has withdrawn)  
Network Computing Architects  
OptiStor Technologies, Inc  
Presidio  
Six Degrees Consulting  
Structured Communications Systems, Inc  
TechPower Solutions, Inc  
Tegile Systems, Inc